

REPORT ON MACHINERY.

No. 5465 (Received at London Office 7/17 1882)
 No. in Reg. Book Survey held at *Dunbarton* Date, first Survey 29.12.81 Last Survey 4. 4. 1882
 on the *S.S. Kainarapa* Tons 1022
 Master *W. H. Chatfield* Built at *W. Denny & Co.* When built 1882
 Engines made at *Dunbarton* By whom made *Denny & Co.* when made 1882
 Boilers made at " By whom made " when made 1882
 Registered Horse Power 292 Owners *Union Coy New Zealand* Port belonging to *Dunedin*

ENGINES, &c.—

Description of Engines *Compound Inverted direct Acting*
 Diameter of Cylinders 41" 7/10" Length of Stroke 48" No. of Rev. per minute 65 Point of Cut off, High Pressure 1/10 Low Pressure 1/10
 Diameter of Screw shaft 12 3/4" Diameter of Tunnel shaft 11 1/2" Diameter of Crank shaft journals 13" Diameter of Crank pin 13" size of Crank webs 8 1/2" x 16 1/2"
 Diameter of screw 14' 6" Pitch of screw 20' 6" No. of blades 4 state whether moveable yes total surface 56' 4"
 No. of Feed pumps 2 diameter of ditto 4 1/2" Stroke 24 1/4" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 4 1/2" Stroke 24 1/4" Can one be overhauled while the other is at work yes
 Where do they pump from *All Compartments.*
 No. of Donkey Engines *one.* Size of Pumps *8" A.P. 9 Stroke* Where do they pump from *Sea, Hold, & Room*
Bilges Separately and from All Compartments.
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections *one.* and sizes 5" Are they connected to condenser, or to circulating pump *Circulating pump.*
 How are the pumps worked *by eccentrics on Crankshaft.*
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks *both.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line *Above*
 Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes
 What pipes are carried through the bunkers *none* How are they protected "
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *before launching*
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from *Upper deck.*

BOILERS, &c.—

Number of Boilers two Description *Cylindrical double ended Multitubular*
 Working Pressure 90 lbs. Tested by hydraulic pressure to 140 lbs. Date of test 4. 5. 82
 Description of superheating apparatus or steam chest *Horizontal*
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no.
 No. of square feet of fire grate surface in each boiler 111 Description of safety valves *direct spring*
 No. to each boiler two area of each valve 28.24" Are they fitted with easing gear yes
 No. of safety valves to superheater " area of each valve " are they fitted with easing gear "
 Smallest distance between boilers and bunkers or woodwork 8"
 Diameter of boilers 13' 2 1/2" Length of boilers 15' 11 1/2" description of riveting of shell long. seams *butte. lap joint* circum. seams *double. lap joint*
 Thickness of shell plates 15/16" diameter of rivet holes 1 3/16" whether punched or drilled *drilled* pitch of rivets 3 3/4" Ci. 4 1/2" long.
 Lap of plating 5 1/4" Ci. 8 1/2" long percentage of strength of longitudinal joint 43.6 working pressure of shell by rules 75 lbs.
 Size of manholes in shell 17" x 13" size of compensating rings 32" x 30" x 7/8"
 No. of Furnaces in each boiler two outside diameter 3' 3" length, top 6' 0" bottom 7' 10"
 Thickness of plates 1/2" description of joint *double butt* if rings are fitted *T. joints* greatest length between rings 6' 6"
 Working pressure of furnace by the rules 80 lbs.
 Combustion chamber plating, thickness, sides 1/2" back *through* top 1/2"
 Pitch of stays to ditto " sides 9" x 8" back " top *Under 3' 10" x 4" x 1" pitch 9" x 8"*
 If stays are fitted with nuts or riveted heads *Nuts.* working pressure of plating by rules 95 lbs.
 Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 91 lbs.
 End plates in steam space, thickness 1 3/16" pitch of stays to ditto 17" x 17" how stays are secured *D. Nut Washers*
 Working pressure by rules 93 lbs. diameter of stays at smallest part 2 1/4" working pressure by rules 82 lbs.
 Front plates at bottom, thickness 3/4" Back plates, thickness " greatest pitch of stays " working pressure by rules "

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Diameter of tubes 3" pitch of tubes 4 1/2" thickness of tube plates, front 1/16" back 1/16"
 How stayed Stay tubes pitch of stays 13 1/4" x 14" width of water spaces 6"
 Diameter of Superheater or Steam chest 31 3/4" length 21'0"
 Thickness of plates 1/2" description of longitudinal joint double Cap. diameter of rivet holes 7/8" pitch of rivets 3 1/4"
 Working pressure of shell by rules 144 lbs. Diameter of flue " thickness of plates "
 If stiffened with rings " distance between rings " Working pressure by rules "
 End plates of superheater, or steam chest; thickness 1/2" shell How stayed dished 3'6" radius
 Superheater or steam chest; how connected to boiler flanged throat united to shell
DONKEY BOILER— Description Vertical Internal cone & cruciform of shell.
 Made at Dumbarton By whom made Sunny & Co. when made 1882
 Where fixed Spar deck working pressure 40 lbs. Tested by hydraulic pressure to 140 lbs. No. of Certificate 441
 Fire grate area 13.5 sq ft. Description of safety valves duct spring No. of safety valves one. area of each 4.088
 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no.
 Diameter of donkey boiler 5'6 1/4" height 11'2 1/4" description of riveting double Single cap joint
 thickness of shell plates 3/8" diameter of rivet holes 13/16" whether punched or drilled drilled
 pitch of rivets 3 1/4" lap of plating 4 1/4" per centage of strength of joint 45
 thickness of crown plates 1/2" stayed by 4 rod stays. 2 7/8" dia.
 Diameter of furnace, top 4'2 1/2" bottom 4'6 1/2" length of furnace "
 thickness of plates 7/16" description of joint Single united cap joint
 thickness of furnace crown plates 7/16" stayed by 4 rod stays. 2 7/8" dia
 Working pressure of shell by rules 94 lbs. working pressure of furnace by rules 45 lbs
 diameter of uptake 16" thickness of plates 3/8" thickness of water tubes 3/8"

The foregoing is a correct description,
 Sunny & Co. Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. The above engines and boilers have been built under special survey. The workmanship is good, and these being now in good and safe working condition, are in my opinion eligible to be noted in the Register Book. "LOYD'S R.C." 4. 82.

Dis submitted that this vessel is eligible to have the notification signed by me recorded
 JM 7/7/82

The amount of Entry Fee £ 3 : 0 : 0 received by me,
 Special .. £ 34 : 12 : 0
 Certificate (if required) .. £ 0 : 0 : 0 4/4/1882
 To be sent as per margin. £ 34 : 12 : 0
 (Travelling Expenses, if any, £)

Wm. Downie
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Friday, 7th July, 1882.

Clyde District
 Lloyd's Register
 Foundation